April 2005 Water Sampling

Validation Data Package for Configuration 1 Interim Action Well Field Monthly Sampling Moab, Utah

September 2005

Moab, Utah

April 27-28, 2005

Data Package Contents

This data package includes the following information:

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Sampling Event Summary

Site: Moab, Utah

Sampling Period: April 27-28, 2005

The purpose of this sampling was to collect data that can be used to evaluate the performance of Configuration 1 of the interim action well field. The extraction wells had been operating the 2005 pumping season since mid-February 2005. This is the third monthly performance sampling round conducted in 2005 for Configuration 1.

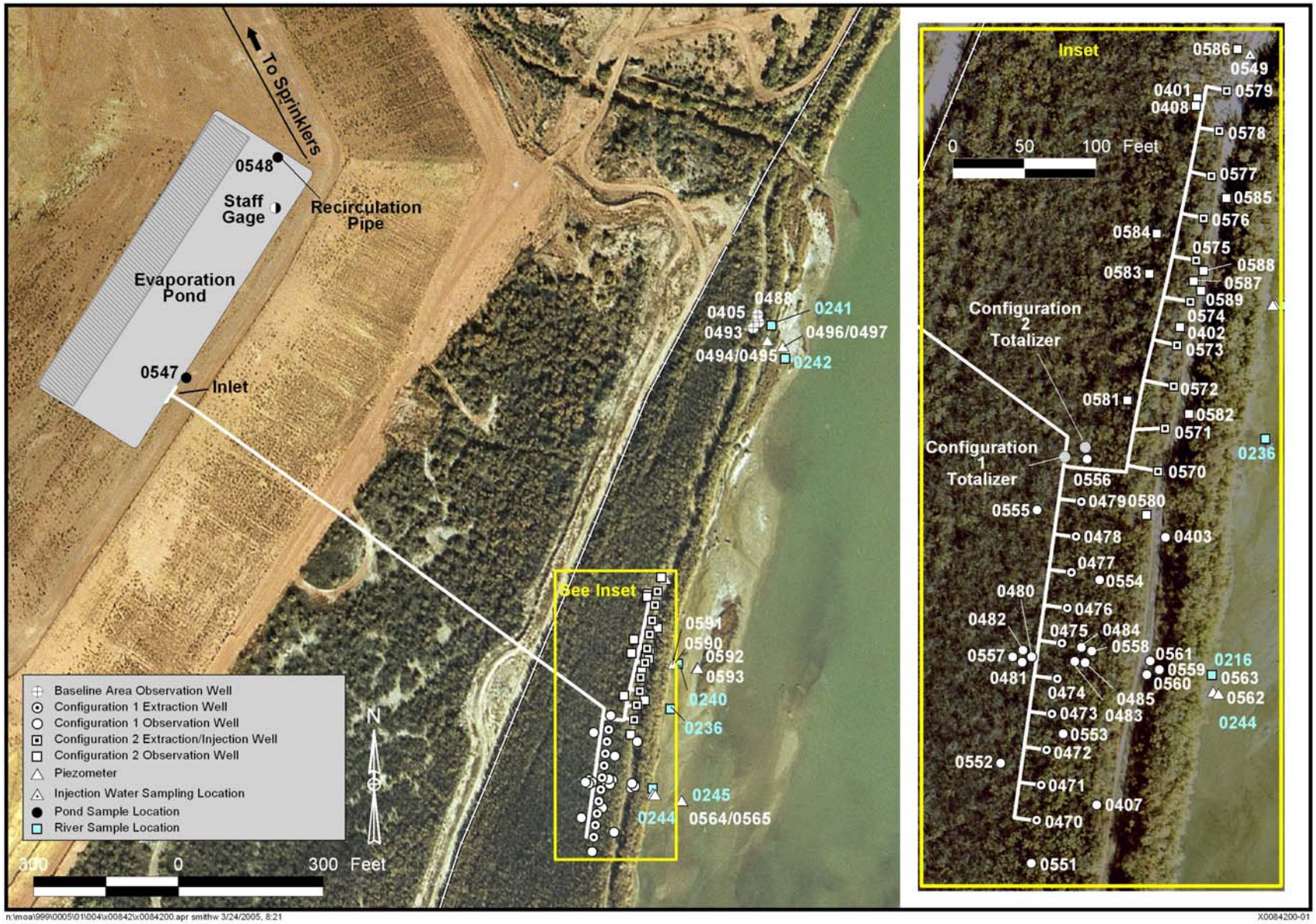
Sampling and analysis was conducted in accordance with the *Operations, Maintenance, and Performance Monitoring Plan for the Interim Action Ground Water Treatment System, February 2004.* Ground water samples were collected from 11 extraction wells (0470-0479 and SMI-PW02), four observation wells (0483, 0557, 0559, and 0560), one surface water location (0216), and two treatment system locations (0547 and 0548). Including one duplicate and one equipment blank, a total of 20 samples were collected.

A detailed discussion of extraction well field performance is presented in the *Fall 2004 Performance Assessment of the Ground Water Interim Action Well Fields at the Moab, Utah, Project Site, January 2005.* However, time versus concentration graphs for selected key performance indicator wells and major contaminants of concern are included. Data presented in these graphs indicate that contaminant concentrations are at expected levels.

Kenneth E. Karp
Site Lead

Date 9/9/05

Sample Location Map



Sample Locations at the Interim Action Well Field and Baseline Area (may include locations not sampled)

Data Assessment Summary

Water Sampling Field Activities Verification Checklist

Project	Moab, Utah	**Date(s) of Water Sampling**	April 27-28, 2005
Date(s) of Verification	August 22, 2005	**Name of Verifier**	Jeff Price

	Response (Yes, No, NA)	Comments
1. Is the SAP the primary document directing field procedures?	Yes	
List other documents, SOP's, instructions.	NA	
2. Were the sampling locations specified in the planning documents sampled?	No	See trip report for explanation.
3. Was a pre-trip calibration conducted as specified in the above named documents?	Yes	
4. Was an operational check of the field equipment conducted twice daily?	Yes	
Did the operational checks meet criteria?	Yes	
5. Were the number and types (alkalinity, temperature, Ec, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	
6. Was the Category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well:		
Was one pump/tubing volume purged prior to sampling?	Yes	
Did the water level stabilize prior to sampling?	Yes	
Did pH, specific conductance, and turbidity measurements stabilize prior to sampling?	Yes	
Was the flow rate less than 500 mL/min?	Yes	
If a portable pump was used, was there a 4 hour delay between pump installation and sampling?	NA	

Water Sampling Field Activities Verification Checklist (continued)

	Response (Yes, No, NA)	Comments
8. Were the following conditions met when purging a Category II well:		
Was the flow rate less than 500 mL/min?	Yes	
Was one pump/tubing volume removed prior to sampling?	Yes	
9. Were duplicates taken at a frequency of one per 20 samples?	Yes	
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?	Yes	
11. Were trip blanks prepared and included with each shipment of VOC samples?	NA	
12. Were QC samples assigned a fictitious site identification number?	Yes	
Was the true identity of the samples recorded on the Quality Assurance Sample Log?	Yes	
13. Were samples collected in the containers specified?	Yes	
14. Were samples filtered and preserved as specified?	Yes	
15. Were the number and types of samples collected as specified?	Yes	
16. Were chain of custody records completed and was sample custody maintained?	Yes	
17. Are field data sheets signed and dated by both team members?	Yes	
18. Was all other pertinent information documented on the field data sheets?	Yes	
19. Was the presence or absence of ice in the cooler documented at every sample location?	Yes	
20. Were water levels measured at the locations specified in the planning documents?	Yes	

Laboratory Performance Assessment

General Information

Requisition No.:	05040183
Sample Event:	April 27-28, 2005 Water Sampling
Site(s):	Moab, Utah
Laboratory:	Paragon Analytics
Work Order No.:	0504313
Analysis:	Metals and Inorganics
Validator:	Steve Donivan
Review Date:	June 1, 2005

This validation was performed according to the *Environmental Procedures Catalog* (STO 6), "Standard Practice for Validation of Laboratory Data", GT-9(P). All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 1.

Table 1. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Uranium, U	GJO-01	SW-846 3005A	SW-846 6020A
Chloride, Cl	MIS-A-039	SW-846 9056	SW-846 9056
Sulfate, SO4	MIS-A-044	SW-846 9056	SW-846 9056
Ammonia as N, NH_3-N	WCH-A-005	MCAWW 350.1	MCAWW 350.1
Total Dissolved Solids, TDS	WCH-A-033	MCAWW 160.1	MCAWW 160.1

Data Qualifier Summary

One uranium result is qualified with a "U" flag (not detected) as listed in Table 2.

Table 2. Qualified Results

Sample Number	Location	Analyte	Flag	Reason
0504313-19	2783 (equipment blank)	Uranium	U	Less than 5 times the blank

Sample Shipping/Receiving

Paragon Analytics in Fort Collins, Colorado, received 20 samples on April 29, 2005 accompanied by a Chain of Custody (COC) form. The COC form was checked to confirm that all of the samples were listed and that signatures and dates were present, indicating sample relinquishment and receipt. The sample submittal documents including the COC form, the sample submittal form, and the sample tickets had no errors or omissions.

Preservation and Holding Times

The sample shipment was received cool and intact with the temperature within the cooler of 1.6 °C, which complies with requirements. All samples had been preserved correctly for the requested analyses. All samples were analyzed within the applicable holding times.

Laboratory Instrument Calibration

All laboratory instrument calibrations were performed correctly in accordance with the cited methods.

Method SW-846 6020A

Calibration for uranium was performed on May 17, 2005 using four calibration standards resulting in a calibration curve with a correlation coefficient (r^2) value greater than 0.995. The absolute value of the curve intercept was less than 3 times the method detection limit (MDL). Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification (CCV) checks were made at the required frequency resulting in seven CCVs. All calibration verification checks met the acceptance criteria. A reporting limit verification check was made at the required frequency to verify the linearity of the calibration curve near the practical quantitation limit. The mass calibration and resolution was checked at the beginning of the analytical run and the internal standard intensities were stable and within acceptance range.

Method SW-846 9056

Initial calibrations were performed for chloride and sulfate using five calibration standards on March 31, 2005. The calibration curve r^2 values were greater than 0.995 and intercepts less than 3 times the MDL. Initial calibration and calibration check standards were prepared from independent sources. Calibration verifications were made at the required frequency resulting in six CCVs. All calibration verification checks met the acceptance criteria.

Method MCAWW 350.1

The initial calibration for ammonia as N was performed using seven calibration standards on May 11, 2005 resulting in a calibration curve with a r^2 value greater than 0.995. Calibration verifications were made at the required frequency, resulting in five CCVs. All calibration verification checks were within the acceptance criteria.

Method MCAWW 160.1

There are no initial or continuing calibration requirements associated with the determination of total dissolved solids (TDS).

Method and Calibration Blanks

The uranium initial and continuing calibration blanks (CCB) were below the practical quantitation limits. The ammonia as N, chloride, sulfate, and TDS method blanks and calibration blanks were below the MDLs with the exception of chloride CCB2 analyzed on May 2, 2005. The samples associated with this CCB were reanalyzed on May 3, 2005 with acceptable CCBs.

Inductively Coupled Plasma Interference Check Sample Analysis

Inductively coupled plasma interference check samples were analyzed at the required frequency to verify the uranium instrumental interelement and background correction factors. All results met the acceptance criteria.

Matrix Spike Analysis

Matrix spike and matrix spike duplicate samples were analyzed for ammonia as N, sulfate, and uranium as a measure of method performance in the site-specific sample matrix. The matrix spike recoveries met the acceptance criteria for all analytes.

Laboratory Replicate Analysis

Matrix spike duplicate and laboratory duplicate samples were analyzed as indicators of laboratory precision. The relative percent difference (RPD) values for the duplicate results for ammonia as N, sulfate, TDS, and uranium were less than 20 percent.

Laboratory Control Sample

Laboratory control samples (LCS) were analyzed at the correct frequency to provide information on the accuracy of the analytical method and the overall laboratory performance, including sample preparation. The LCS results were acceptable for all analytes.

Metals Serial Dilution

A serial dilution was analyzed with acceptable results during the uranium analysis to monitor physical or chemical interferences that may exist in the site-specific sample matrix.

Detection Limits/Dilutions

The samples were diluted prior to analysis of uranium to reduce interferences. Samples were diluted in a consistent and acceptable manner when required. The required detection limits were achieved for all analytes.

Completeness

Results were reported in the correct units for all analytes requested using contract-required laboratory qualifiers.

Chromatography Peak Integration

The integration of analyte peaks was reviewed for all ion chromatography data. There were no manual integrations performed and all peak integrations were satisfactory.

Electronic Data Deliverable File

The electronic data deliverable (EDD) file arrived on May 26, 2005. The Sample Management System EDD validation module was used to verify that the EDD file was complete and in compliance with requirements. The module compares the contents of the file to the requested analyses to ensure all and only the requested data are delivered. The contents of the EDD were manually examined to verify that the sample results accurately reflect the data contained in the sample data package.

Field Analyses/Activities

The following information summarizes the field analyses and activities for this sampling event period.

Field Activities

All monitor well results were qualified with an "F" flag in the database indicating the wells were purged and sampled using the low-flow sampling method. Extraction wells are not sampled using the low-flow sampling method.

An equipment blank was collected and analyzed for the same constituents as the Moab environmental samples. Concentrations measured in the equipment blank were below their respective contract required detection limits; therefore, equipment blank results are considered acceptable. Duplicate samples were collected from location 0560. There are no established regulatory criteria for the evaluation of field duplicate samples; therefore, U.S. Environmental Protection Agency (EPA) guidance for laboratory duplicates (which is conservative for field duplicates) was used to assess the precision of the field duplicates. Duplicate results met the laboratory duplicate criteria of +/- 20 RPD and are considered acceptable.

Certification

Results were reported in correct units for all analytes requested. Appropriate contract-required laboratory qualifiers and target analyte lists were used. The required detection limits were met when possible or an explanation of why they were not met was given in the laboratory case narrative. All analytical quality control criteria were met except as qualified on the Ground Water Quality Data by Parameter, Surface Water Quality by Parameter, or equipment/trip blank database printouts. The meaning of data qualifiers is defined on the database printouts or defined in the EPA Contract Laboratory Program Statement of Work for Inorganic Analysis, Multi-Media Multi-Concentration, Document Number ILMO2.0, 1991. All data in this package are considered validated and may be treated as final results.

Laboratory Validation Lead: Steve Donivan — Steve Donivan — 9-6-05 — Date

Field Activities Validation Lead: for — Jeff Price — 9/6/05 — Date

Attachment 1
Data Presentation

Minimums and Maximums Report

Minimums and Maximums Report

The Minimums and Maximums Report is generated by a data validation application (DataVal) used to query the SEEPro database. The DataVal compares the new data set with historical data and lists all new data that fall outside the historical data range. Values listed in the report are further screened using the following criteria. Results are not considered anomalous if (1) identified low concentrations are the result of low detection limits; (2) the concentration detected is within 50 percent of historical minimum or maximum values; (3) there were fewer than five historical samples for comparison.

The anomalously low values observed in extraction wells 0470, 0471, 0472, 0473, 0474, 0476, 0477, and 0479 and surface water location 0216 can be attributed to an increased Colorado River stage that results in a discharge of fresh water into the adjacent aquifer. The increased chloride concentration in the treatment system location 0547 can be attributed to the ground water added to the extraction system from recently added (early April 2005) extraction well SMI-PW02, which is screened over a deeper interval of the aquifer. Ground water encountered at these depths (20 to 60 feet bgs) typically has higher TDS and chloride concentrations.

SAMPLING DATA VALIDATION MINIMUMS AND MAXIMUMS REPORT -- No Field Parameters
LAB CODE: PAR, PARAGON (Fort Collins, CO)
LAB REQUISITION(S): 05040183
HISTORY BEGIN DATE: comparing to all historical data
REPORT DATE: 08/22/05 10:53:25: AM

SITE CODE	LOCATION CODE	SAMPLE DATE	ANALYTE	CURRENT RESULT	CURRENT QUALIFIERS LAB	CURRENT QUALIFIERS DATA	HISTORICAL MAXIMUM RESULT	HISTORICAL MAXIMUM QUALIFIERS LAB	HISTORICAL MAXIMUM QUALIFIERS DATA	HISTORICAL MINIMUM RESULT	HISTORICAL MINIMUM QUALIFIERS LAB	HISTORICAL MINIMUM QUALIFIERS DATA	COUNT N	COUNT N BELOW DETECT
MOA01	0216	04/27/2005	Ammonia Total as N	0.1	U		140			0.14			9	0
MOA01	0216	04/27/2005	Chloride	30			670			54			9	0
MOA01	0216	04/27/2005	Sulfate	92			2700			170			9	0
MOA01	0216	04/27/2005	Total Dissolved Solids	300			5100			470			9	0
MOA01	0216	04/27/2005	Uranium	0.0021			0.84			0.0051			9	0
MOA01	0470	04/28/2005	Ammonia Total as N	150		F	1180			650			20	0
MOA01	0470	04/28/2005	Sulfate	1600		F	12000			6600			20	0
MOA01	0470	04/28/2005	Total Dissolved Solids	5300		F	27250			14000		F	20	0
MOA01	0470	04/28/2005	Uranium	0.53		F	4.6			2.1		J	20	0
MOA01	0471	04/28/2005	Ammonia Total as N	190		F	1200			500		F	18	0
MOA01	0471	04/28/2005	Sulfate	1700		F	11500			7500			18	0
MOA01	0471	04/28/2005	Total Dissolved Solids	5600		F	28000		F	14000		F	18	0
MOA01	0471	04/28/2005	Uranium	0.51		F	4		F	2		J	18	0
MOA01	0472	04/28/2005	Ammonia Total as N	140		F	1000		F	420			19	0
MOA01	0472	04/28/2005	Chloride	1400		F	7400		F	1900		F	19	0
MOA01	0472	04/28/2005	Sulfate	1500		F	11000		F	7200			19	0
MOA01	0472	04/28/2005	Total Dissolved Solids	4200		F	23325			14000		F	19	0
MOA01	0472	04/28/2005	Uranium	0.68		F	4		F	1.9		J	19	0
MOA01	0473	04/28/2005	Ammonia Total as N	170		F	1100		F	580			18	0
MOA01	0473	04/28/2005	Sulfate	2100		F	10000		F	6800			18	0
MOA01	0473	04/28/2005	Total Dissolved Solids	6000		F	25000		F	13000			18	0
MOA01	0473	04/28/2005	Uranium	0.89		F	3.7		F	2.3		J	18	0

SAMPLING DATA VALIDATION MINIMUMS AND MAXIMUMS REPORT -- No Field Parameters
LAB CODE: PAR, PARAGON (Fort Collins, CO)
LAB REQUISITION(S): 05040183
HISTORY BEGIN DATE: comparing to all historical data
REPORT DATE: 08/22/05 10:53:25: AM

				CURRENT			HISTORICAL MAXIMUM			HISTORICAL MINIMUM			COUNT	
SITE CODE	LOCATION CODE	SAMPLE DATE	ANALYTE	RESULT	QUALIFIERS LAB	QUALIFIERS DATA	RESULT	QUALIFIERS LAB	QUALIFIERS DATA	RESULT	QUALIFIERS LAB	QUALIFIERS DATA	N	N BELOW DETECT
MOA01	0474	04/28/2005	Ammonia Total as N	280		F	1110			410			20	0
MOA01	0474	04/28/2005	Sulfate	3000		F	9950			6300			20	0
MOA01	0474	04/28/2005	Total Dissolved Solids	8800		F	25000		F	13000			20	0
MOA01	0474	04/28/2005	Uranium	0.96		F	3.5			1.9		F	20	0
MOA01	0475	04/28/2005	Ammonia Total as N	270		F	1100		F	390		F	18	0
MOA01	0475	04/28/2005	Sulfate	3400		F	10000		F	5100		F	18	0
MOA01	0475	04/28/2005	Total Dissolved Solids	9000		F	25000		F	10000			18	0
MOA01	0475	04/28/2005	Uranium	1.1		F	3.2		F	1.4			18	0
MOA01	0476	04/27/2005	Ammonia Total as N	210		F	1100		F	360			18	0
MOA01	0476	04/27/2005	Sulfate	2700		F	9900			4500			18	0
MOA01	0476	04/27/2005	Total Dissolved Solids	7000		F	24000		F	9300			18	0
MOA01	0476	04/27/2005	Uranium	0.85		F	3.3		F	1.3			18	0
MOA01	0477	04/27/2005	Ammonia Total as N	170		F	1200		F	360		F	18	0
MOA01	0477	04/27/2005	Chloride	1900		F	9000		F	2000			18	0
MOA01	0477	04/27/2005	Sulfate	2600		F	9800		F	4700			18	0
MOA01	0477	04/27/2005	Total Dissolved Solids	6500		F	26000		F	9400			18	0
MOA01	0477	04/27/2005	Uranium	0.84		F	3.2		F	1.4		F	18	0
MOA01	0478	04/27/2005	Ammonia Total as N	310		F	1400		F	420		F	18	0
MOA01	0478	04/27/2005	Sulfate	3600		F	11000		F	4900		F	18	0
MOA01	0478	04/27/2005	Total Dissolved Solids	8700		F	32000		F	11000		F	18	0
MOA01	0479	04/27/2005	Ammonia Total as N	200		F	1400		F	400		F	18	0
MOA01	0479	04/27/2005	Chloride	1700		F	14000		F	2300		F	18	0

SAMPLING DATA VALIDATION MINIMUMS AND MAXIMUMS REPORT -- No Field Parameters
LAB CODE: PAR, PARAGON (Fort Collins, CO)
LAB REQUISITION(S): 05040183
HISTORY BEGIN DATE: comparing to all historical data
REPORT DATE: 08/22/05 10:53:25: AM

				CURRENT			HISTORICAL MAXIMUM			HISTORICAL MINIMUM			COUNT	
SITE CODE	LOCATION CODE	SAMPLE DATE	ANALYTE	RESULT	QUALIFIERS LAB	DATA	RESULT	QUALIFIERS LAB	DATA	RESULT	QUALIFIERS LAB	DATA	N	N BELOW DETECT
MOA01	0479	04/27/2005	Sulfate	2400		F	10800			3600			18	0
MOA01	0479	04/27/2005	Total Dissolved Solids	6100		F	31000		F	9800			18	0
MOA01	0479	04/27/2005	Uranium	0.69		F	3.3		F	1.2		F	18	0
MOA01	0547	04/28/2005	Chloride	16000			6400		J	4000			9	0
MOA01	0547	04/28/2005	Sulfate	5600			9400			6300			9	0
MOA01	0547	04/28/2005	Total Dissolved Solids	28000			21000			15000			9	0
MOA01	0547	04/28/2005	Uranium	1.3			3			1.9			9	0
MOA01	0548	04/28/2005	Chloride	13000			12000			6700			8	0
MOA01	0548	04/28/2005	Uranium	2.5			6.2			2.6			8	0
MOA01	0559	04/27/2005	Chloride	540		F	6300		F	860			11	0
MOA01	0559	04/27/2005	Sulfate	1100		F	8100		F	1400		F	11	0
MOA01	0559	04/27/2005	Total Dissolved Solids	2300		F	22000		F	3400		F	11	0
MOA01	0559	04/27/2005	Uranium	0.32		F	2.4		F	0.48		F	11	0
MOA01	0560	04/27/2005	Chloride	35000		F	41000		F	36000		F	10	0
MOA01	0560	04/27/2005	Chloride	33000		F	41000		F	36000		F	10	0
MOA01	0560	04/27/2005	Total Dissolved Solids	58000		F	75000		F	61000		F	10	0
MOA01	0560	04/27/2005	Uranium	1.8		F	1.7		F	0.92		JF	10	0

SAMPLING DATA VALIDATION MINIMUMS AND MAXIMUMS REPORT -- No Field Parameters
LAB CODE: PAR, PARAGON (Fort Collins, CO)
LAB REQUISITION(S): 05040183
HISTORY BEGIN DATE: comparing to all historical data
REPORT DATE: 08/22/05 10:53:25: AM

SITE CODE	LOCATION CODE	SAMPLE DATE	ANALYTE	CURRENT RESULT	CURRENT QUALIFIERS LAB	CURRENT QUALIFIERS DATA	HISTORICAL MAXIMUM RESULT	HISTORICAL MAXIMUM QUALIFIERS LAB	HISTORICAL MAXIMUM QUALIFIERS DATA	HISTORICAL MINIMUM RESULT	HISTORICAL MINIMUM QUALIFIERS LAB	HISTORICAL MINIMUM QUALIFIERS DATA	COUNT N	COUNT N BELOW DETECT

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
Z	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
C	Pesticide result confirmed by GC-MS.
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
D	Analyte determined in diluted sample.
P	> 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
>	Result above upper detection limit.
J	Estimated

DATA QUALIFIERS:

J	Estimated value.	F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.
L	Less than 3 bore volumes purged prior to sampling.	R	Unusable result.	X	Location is undefined.
U	Parameter analyzed for but was not detected.	Q	Qualitative result due to sampling technique		

Anomalous Data Review Checksheet

Anomalous Data Review Checksheet

Site: Moab Processing Site **Sampling Date:** April 27-28, 2005

Reviewer: Jeff Price (Name) — Signature — 9/6/05 (Date)

Site Lead: Kenneth Karp (Name) — Signature — 9/9/05 (Date)

Loc. No.	Analyte	Type of Anomaly	Disposition
0216	Uranium	Low	Low due to high river level.
0470	Ammonia total as N	Low	Low due to high river level.
0470	Sulfate	Low	Low due to high river level.
0470	TDS	Low	Low due to high river level.
0470	Uranium	Low	Low due to high river level.
0471	Ammonia total as N	Low	Low due to high river level.
0471	Sulfate	Low	Low due to high river level.
0471	TDS	Low	Low due to high river level.
0471	Uranium	Low	Low due to high river level.
0472	Ammonia total as N	Low	Low due to high river level.
0472	Sulfate	Low	Low due to high river level.
0472	TDS	Low	Low due to high river level.
0472	Uranium	Low	Low due to high river level.
0473	Ammonia total as N	Low	Low due to high river level.
0473	Sulfate	Low	Low due to high river level.
0473	TDS	Low	Low due to high river level.
0473	Uranium	Low	Low due to high river level.
0474	Sulfate	Low	Low due to high river level.
0474	Uranium	Low	Low due to high river level.
0476	Uranium	Low	Low due to high river level.
0477	Ammonia total as N	Low	Low due to high river level.
0479	Ammonia total as N	Low	Low due to high river level.
0547	Chloride	High	Increased concentration due to recently added extraction well SMI-PW02 discharge water.

Water Quality Data

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 9/6/2005 11:14 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0470	WL, EXT	04/28/2005	0001	10.30 - 19.70	316		F	#	-	-
	mg/L	0471	WL, EXT	04/28/2005	0001	10.30 - 19.70	346		F	#	-	-
	mg/L	0472	WL, EXT	04/28/2005	0001	10.30 - 19.70	330		F	#	-	-
	mg/L	0473	WL, EXT	04/28/2005	0001	10.30 - 19.70	336		F	#	-	-
	mg/L	0474	WL, EXT	04/28/2005	0001	10.30 - 19.70	422		F	#	-	-
	mg/L	0475	WL, EXT	04/28/2005	0001	10.30 - 19.70	442		F	#	-	-
	mg/L	0476	WL, EXT	04/27/2005	0001	10.30 - 19.70	396		F	#	-	-
	mg/L	0477	WL, EXT	04/27/2005	0001	10.30 - 19.70	346		F	#	-	-
	mg/L	0478	WL, EXT	04/27/2005	0001	9.60 - 23.90	466		F	#	-	-
	mg/L	0479	WL, EXT	04/27/2005	0001	9.30 - 23.60	344		F	#	-	-
	mg/L	0483	WL	04/27/2005	0001	18.00 - 18.00	534		F	#	-	-
	mg/L	0547	TS, INFL	04/28/2005	0001	0.00 - 0.00	520			#	-	-
	mg/L	0548	TS, EPND	04/28/2005	0001	0.00 - 0.00	344			#	-	-
	mg/L	0557	WL	04/27/2005	0001	40.00 - 40.00	800		F	#	-	-
	mg/L	0559	WL	04/27/2005	0001	19.00 - 19.00	254		F	#	-	-
	mg/L	0560	WL	04/27/2005	0001	31.00 - 31.00	582		F	#	-	-
	mg/L	SMI-PW02	WL	04/28/2005	0001	20.04 - 60.04	626		F	#	-	-
Ammonia Total as N	mg/L	0216	SL, RIV	04/27/2005	0001	1.00 - 1.00	0.1	U		#	0.1	-
	mg/L	0470	WL, EXT	04/28/2005	0001	10.30 - 19.70	150		F	#	10	-
	mg/L	0471	WL, EXT	04/28/2005	0001	10.30 - 19.70	190		F	#	50	-
	mg/L	0472	WL, EXT	04/28/2005	0001	10.30 - 19.70	140		F	#	10	-
	mg/L	0473	WL, EXT	04/28/2005	0001	10.30 - 19.70	170		F	#	50	-
	mg/L	0474	WL, EXT	04/28/2005	0001	10.30 - 19.70	280		F	#	50	-
	mg/L	0475	WL, EXT	04/28/2005	0001	10.30 - 19.70	270		F	#	50	-
	mg/L	0476	WL, EXT	04/27/2005	0001	10.30 - 19.70	210		F	#	50	-
	mg/L	0477	WL, EXT	04/27/2005	0001	10.30 - 19.70	170		F	#	50	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 9/6/2005 11:14 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	0478	WL, EXT	04/27/2005	0001	9.60 - 23.90	310		F	#	50	-
	mg/L	0479	WL, EXT	04/27/2005	0001	9.30 - 23.60	200		F	#	50	-
	mg/L	0483	WL	04/27/2005	0001	18.00 - 18.00	470		F	#	50	-
	mg/L	0547	TS, INFL	04/28/2005	0001	0.00 - 0.00	840			#	50	-
	mg/L	0548	TS, EPND	04/28/2005	0001	0.00 - 0.00	930			#	50	-
	mg/L	0557	WL	04/27/2005	0001	40.00 - 40.00	1700		F	#	50	-
	mg/L	0559	WL	04/27/2005	0001	19.00 - 19.00	140		F	#	10	-
	mg/L	0560	WL	04/27/2005	0001	31.00 - 31.00	2100		F	#	50	-
	mg/L	0560	WL	04/27/2005	0002	31.00 - 31.00	2100		F	#	50	-
	mg/L	SMI-PW02	WL	04/28/2005	0001	20.04 - 60.04	1400		F	#	50	-
Chloride	mg/L	0216	SL, RIV	04/27/2005	0001	1.00 - 1.00	30			#	1	-
	mg/L	0470	WL, EXT	04/28/2005	0001	10.30 - 19.70	1900		F	#	40	-
	mg/L	0471	WL, EXT	04/28/2005	0001	10.30 - 19.70	2100		F	#	40	-
	mg/L	0472	WL, EXT	04/28/2005	0001	10.30 - 19.70	1400		F	#	20	-
	mg/L	0473	WL, EXT	04/28/2005	0001	10.30 - 19.70	1900		F	#	40	-
	mg/L	0474	WL, EXT	04/28/2005	0001	10.30 - 19.70	3100		F	#	40	-
	mg/L	0475	WL, EXT	04/28/2005	0001	10.30 - 19.70	2900		F	#	40	-
	mg/L	0476	WL, EXT	04/27/2005	0001	10.30 - 19.70	2100		F	#	40	-
	mg/L	0477	WL, EXT	04/27/2005	0001	10.30 - 19.70	1900		F	#	20	-
	mg/L	0478	WL, EXT	04/27/2005	0001	9.60 - 23.90	2500		F	#	40	-
	mg/L	0479	WL, EXT	04/27/2005	0001	9.30 - 23.60	1700		F	#	20	-
	mg/L	0483	WL	04/27/2005	0001	18.00 - 18.00	3800		F	#	40	-
	mg/L	0547	TS, INFL	04/28/2005	0001	0.00 - 0.00	16000			#	200	-
	mg/L	0548	TS, EPND	04/28/2005	0001	0.00 - 0.00	13000			#	200	-
	mg/L	0557	WL	04/27/2005	0001	40.00 - 40.00	15000		F	#	200	-
	mg/L	0559	WL	04/27/2005	0001	19.00 - 19.00	540		F	#	10	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 9/6/2005 11:14 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Chloride	mg/L	0560	WL	04/27/2005	0001	31.00 - 31.00	35000		F	#	1000	-
	mg/L	0560	WL	04/27/2005	0002	31.00 - 31.00	33000		F	#	1000	-
	mg/L	SMI-PW02	WL	04/28/2005	0001	20.04 - 60.04	27000		F	#	400	-
Dissolved Oxygen	mg/L	0216	SL, RIV	04/27/2005	N001	1.00 - 1.00	10.70			#	-	-
	mg/L	0470	WL, EXT	04/28/2005	N001	10.30 - 19.70	0.78		F	#	-	-
	mg/L	0471	WL, EXT	04/28/2005	N001	10.30 - 19.70	0.64		F	#	-	-
	mg/L	0472	WL, EXT	04/28/2005	N001	10.30 - 19.70	0.92		F	#	-	-
	mg/L	0473	WL, EXT	04/28/2005	N001	10.30 - 19.70	0.41		F	#	-	-
	mg/L	0474	WL, EXT	04/28/2005	N001	10.30 - 19.70	0.37		F	#	-	-
	mg/L	0475	WL, EXT	04/28/2005	N001	10.30 - 19.70	1.32		F	#	-	-
	mg/L	0476	WL, EXT	04/27/2005	N001	10.30 - 19.70	3.07		F	#	-	-
	mg/L	0477	WL, EXT	04/27/2005	N001	10.30 - 19.70	5.71		F	#	-	-
	mg/L	0478	WL, EXT	04/27/2005	N001	9.60 - 23.90	10.84		F	#	-	-
	mg/L	0479	WL, EXT	04/27/2005	N001	9.30 - 23.60	9.34		F	#	-	-
	mg/L	0483	WL	04/27/2005	N001	18.00 - 18.00	4.42		F	#	-	-
	mg/L	0547	TS, INFL	04/28/2005	N001	0.00 - 0.00	2.83			#	-	-
	mg/L	0548	TS, EPND	04/28/2005	N001	0.00 - 0.00	7.99			#	-	-
	mg/L	0557	WL	04/27/2005	N001	40.00 - 40.00	1.48		F	#	-	-
	mg/L	0559	WL	04/27/2005	N001	19.00 - 19.00	2.28		F	#	-	-
	mg/L	0560	WL	04/27/2005	N001	31.00 - 31.00	2.47		F	#	-	-
	mg/L	SMI-PW02	WL	04/28/2005	N001	20.04 - 60.04	1.20		F	#	-	-
Oxidation Reduction Potent	mV	0216	SL, RIV	04/27/2005	N001	1.00 - 1.00	165			#	-	-
	mV	0470	WL, EXT	04/28/2005	N001	10.30 - 19.70	176		F	#	-	-
	mV	0471	WL, EXT	04/28/2005	N001	10.30 - 19.70	179		F	#	-	-
	mV	0472	WL, EXT	04/28/2005	N001	10.30 - 19.70	171		F	#	-	-
	mV	0473	WL, EXT	04/28/2005	N001	10.30 - 19.70	171		F	#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 9/6/2005 11:14 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	0474	WL, EXT	04/28/2005	N001	10.30 - 19.70	182		F	#	-	-
	mV	0475	WL, EXT	04/28/2005	N001	10.30 - 19.70	196		F	#	-	-
	mV	0476	WL, EXT	04/27/2005	N001	10.30 - 19.70	180		F	#	-	-
	mV	0477	WL, EXT	04/27/2005	N001	10.30 - 19.70	176.6		F	#	-	-
	mV	0478	WL, EXT	04/27/2005	N001	9.60 - 23.90	175		F	#	-	-
	mV	0479	WL, EXT	04/27/2005	N001	9.30 - 23.60	152		F	#	-	-
	mV	0483	WL	04/27/2005	N001	18.00 - 18.00	136.5		F	#	-	-
	mV	0547	TS, INFL	04/28/2005	N001	0.00 - 0.00	228			#	-	-
	mV	0548	TS, EPND	04/28/2005	N001	0.00 - 0.00	240			#	-	-
	mV	0557	WL	04/27/2005	N001	40.00 - 40.00	103.0		F	#	-	-
	mV	0559	WL	04/27/2005	N001	19.00 - 19.00	157.1		F	#	-	-
	mV	0560	WL	04/27/2005	N001	31.00 - 31.00	217.5		F	#	-	-
	mV	SMI-PW02	WL	04/28/2005	N001	20.04 - 60.04	196		F	#	-	-
pH	s.u.	0216	SL, RIV	04/27/2005	N001	1.00 - 1.00	8.14			#	-	-
	s.u.	0470	WL, EXT	04/28/2005	N001	10.30 - 19.70	7.36		F	#	-	-
	s.u.	0471	WL, EXT	04/28/2005	N001	10.30 - 19.70	7.36		F	#	-	-
	s.u.	0472	WL, EXT	04/28/2005	N001	10.30 - 19.70	7.35		F	#	-	-
	s.u.	0473	WL, EXT	04/28/2005	N001	10.30 - 19.70	7.14		F	#	-	-
	s.u.	0474	WL, EXT	04/28/2005	N001	10.30 - 19.70	6.97		F	#	-	-
	s.u.	0475	WL, EXT	04/28/2005	N001	10.30 - 19.70	6.92		F	#	-	-
	s.u.	0476	WL, EXT	04/27/2005	N001	10.30 - 19.70	7.01		F	#	-	-
	s.u.	0477	WL, EXT	04/27/2005	N001	10.30 - 19.70	6.96		F	#	-	-
	s.u.	0478	WL, EXT	04/27/2005	N001	9.60 - 23.90	6.88		F	#	-	-
	s.u.	0479	WL, EXT	04/27/2005	N001	9.30 - 23.60	7.00		F	#	-	-
	s.u.	0483	WL	04/27/2005	N001	18.00 - 18.00	7.16		F	#	-	-
	s.u.	0547	TS, INFL	04/28/2005	N001	0.00 - 0.00	6.84			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 9/6/2005 11:14 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	0548	TS, EPND	04/28/2005	N001	0.00 - 0.00	7.64			#	-	-
	s.u.	0557	WL	04/27/2005	N001	40.00 - 40.00	6.78		F	#	-	-
	s.u.	0559	WL	04/27/2005	N001	19.00 - 19.00	7.87		F	#	-	-
	s.u.	0560	WL	04/27/2005	N001	31.00 - 31.00	6.85		F	#	-	-
	s.u.	SMI-PW02	WL	04/28/2005	N001	20.04 - 60.04	6.68		F	#	-	-
Specific Conductance	umhos/cm	0216	SL, RIV	04/27/2005	N001	1.00 - 1.00	571			#	-	-
	umhos/cm	0470	WL, EXT	04/28/2005	N001	10.30 - 19.70	8878		F	#	-	-
	umhos/cm	0476	WL, EXT	04/27/2005	N001	10.30 - 19.70	11511		F	#	-	-
	umhos/cm	0477	WL, EXT	04/27/2005	N001	10.30 - 19.70	10091		F	#	-	-
	umhos/cm	0478	WL, EXT	04/27/2005	N001	9.60 - 23.90	14226		F	#	-	-
	umhos/cm	0479	WL, EXT	04/27/2005	N001	9.30 - 23.60	10976		F	#	-	-
	umhos/cm	0483	WL	04/27/2005	N001	18.00 - 18.00	19828		F	#	-	-
	umhos/cm	0547	TS, INFL	04/28/2005	N001	0.00 - 0.00	46672			#	-	-
	umhos/cm	0548	TS, EPND	04/28/2005	N001	0.00 - 0.00	43277			#	-	-
	umhos/cm	0557	WL	04/27/2005	N001	40.00 - 40.00	58475		F	#	-	-
	umhos/cm	0559	WL	04/27/2005	N001	19.00 - 19.00	5209		F	#	-	-
	umhos/cm	0560	WL	04/27/2005	N001	31.00 - 31.00	107368		F	#	-	-
	umhos/cm	SMI-PW02	WL	04/28/2005	N001	20.04 - 60.04	75344		F	#	-	-
Sulfate	mg/L	0216	SL, RIV	04/27/2005	0001	1.00 - 1.00	92			#	2.5	-
	mg/L	0470	WL, EXT	04/28/2005	0001	10.30 - 19.70	1600		F	#	50	-
	mg/L	0471	WL, EXT	04/28/2005	0001	10.30 - 19.70	1700		F	#	50	-
	mg/L	0472	WL, EXT	04/28/2005	0001	10.30 - 19.70	1500		F	#	50	-
	mg/L	0473	WL, EXT	04/28/2005	0001	10.30 - 19.70	2100		F	#	50	-
	mg/L	0474	WL, EXT	04/28/2005	0001	10.30 - 19.70	3000		F	#	50	-
	mg/L	0475	WL, EXT	04/28/2005	0001	10.30 - 19.70	3400		F	#	50	-
	mg/L	0476	WL, EXT	04/27/2005	0001	10.30 - 19.70	2700		F	#	50	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 9/6/2005 11:14 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/L	0477	WL, EXT	04/27/2005	0001	10.30 - 19.70	2600		F	#	50	-
	mg/L	0478	WL, EXT	04/27/2005	0001	9.60 - 23.90	3600		F	#	50	-
	mg/L	0479	WL, EXT	04/27/2005	0001	9.30 - 23.60	2400		F	#	50	-
	mg/L	0483	WL	04/27/2005	0001	18.00 - 18.00	3900		F	#	100	-
	mg/L	0547	TS, INFL	04/28/2005	0001	0.00 - 0.00	5600			#	250	-
	mg/L	0548	TS, EPND	04/28/2005	0001	0.00 - 0.00	8700			#	250	-
	mg/L	0557	WL	04/27/2005	0001	40.00 - 40.00	11000		F	#	250	-
	mg/L	0559	WL	04/27/2005	0001	19.00 - 19.00	1100		F	#	25	-
	mg/L	0560	WL	04/27/2005	0001	31.00 - 31.00	9800		F	#	500	-
	mg/L	0560	WL	04/27/2005	0002	31.00 - 31.00	9500		F	#	500	-
	mg/L	SMI-PW02	WL	04/28/2005	0001	20.04 - 60.04	7800		F	#	500	-
Temperature	C	0216	SL, RIV	04/27/2005	N001	1.00 - 1.00	7.26			#	-	-
	C	0470	WL, EXT	04/28/2005	N001	10.30 - 19.70	12.52		F	#	-	-
	C	0476	WL, EXT	04/27/2005	N001	10.30 - 19.70	9.70		F	#	-	-
	C	0477	WL, EXT	04/27/2005	N001	10.30 - 19.70	11.75		F	#	-	-
	C	0478	WL, EXT	04/27/2005	N001	9.60 - 23.90	9.76		F	#	-	-
	C	0479	WL, EXT	04/27/2005	N001	9.30 - 23.60	8.97		F	#	-	-
	C	0483	WL	04/27/2005	N001	18.00 - 18.00	11.21		F	#	-	-
	C	0547	TS, INFL	04/28/2005	N001	0.00 - 0.00	12.27			#	-	-
	C	0548	TS, EPND	04/28/2005	N001	0.00 - 0.00	11.30			#	-	-
	C	0557	WL	04/27/2005	N001	40.00 - 40.00	10.86		F	#	-	-
	C	0559	WL	04/27/2005	N001	19.00 - 19.00	10.01		F	#	-	-
	C	0560	WL	04/27/2005	N001	31.00 - 31.00	10.11		F	#	-	-
	C	SMI-PW02	WL	04/28/2005	N001	20.04 - 60.04	12.07		F	#	-	-
Total Dissolved Solids	mg/L	0216	SL, RIV	04/27/2005	0001	1.00 - 1.00	300			#	20	-
	mg/L	0470	WL, EXT	04/28/2005	0001	10.30 - 19.70	5300		F	#	200	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 9/6/2005 11:14 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Total Dissolved Solids	mg/L	0471	WL, EXT	04/28/2005	0001	10.30 - 19.70	5600		F	#	200	-
	mg/L	0472	WL, EXT	04/28/2005	0001	10.30 - 19.70	4200		F	#	200	-
	mg/L	0473	WL, EXT	04/28/2005	0001	10.30 - 19.70	6000		F	#	200	-
	mg/L	0474	WL, EXT	04/28/2005	0001	10.30 - 19.70	8800		F	#	200	-
	mg/L	0475	WL, EXT	04/28/2005	0001	10.30 - 19.70	9000		F	#	200	-
	mg/L	0476	WL, EXT	04/27/2005	0001	10.30 - 19.70	7000		F	#	200	-
	mg/L	0477	WL, EXT	04/27/2005	0001	10.30 - 19.70	6500		F	#	200	-
	mg/L	0478	WL, EXT	04/27/2005	0001	9.60 - 23.90	8700		F	#	200	-
	mg/L	0479	WL, EXT	04/27/2005	0001	9.30 - 23.60	6100		F	#	200	-
	mg/L	0483	WL	04/27/2005	0001	18.00 - 18.00	11000		F	#	400	-
	mg/L	0547	TS, INFL	04/28/2005	0001	0.00 - 0.00	28000			#	1000	-
	mg/L	0548	TS, EPND	04/28/2005	0001	0.00 - 0.00	30000			#	1000	-
	mg/L	0557	WL	04/27/2005	0001	40.00 - 40.00	35000		F	#	1000	-
	mg/L	0559	WL	04/27/2005	0001	19.00 - 19.00	2300		F	#	80	-
	mg/L	0560	WL	04/27/2005	0001	31.00 - 31.00	58000		F	#	2000	-
	mg/L	0560	WL	04/27/2005	0002	31.00 - 31.00	61000		F	#	2000	-
	mg/L	SMI-PW02	WL	04/28/2005	0001	20.04 - 60.04	47000		F	#	2000	-
Turbidity	NTU	0216	SL, RIV	04/27/2005	N001	1.00 - 1.00	2000	>		#	-	-
	NTU	0470	WL, EXT	04/28/2005	N001	10.30 - 19.70	0.92		F	#	-	-
	NTU	0471	WL, EXT	04/28/2005	N001	10.30 - 19.70	2.06		F	#	-	-
	NTU	0472	WL, EXT	04/28/2005	N001	10.30 - 19.70	0.95		F	#	-	-
	NTU	0473	WL, EXT	04/28/2005	N001	10.30 - 19.70	1.16		F	#	-	-
	NTU	0474	WL, EXT	04/28/2005	N001	10.30 - 19.70	1.36		F	#	-	-
	NTU	0475	WL, EXT	04/28/2005	N001	10.30 - 19.70	0.98		F	#	-	-
	NTU	0476	WL, EXT	04/27/2005	N001	10.30 - 19.70	0.80		F	#	-	-
	NTU	0477	WL, EXT	04/27/2005	N001	10.30 - 19.70	0.96		F	#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 9/6/2005 11:14 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	0478	WL, EXT	04/27/2005	N001	9.60 - 23.90	0.59		F	#	-	-
	NTU	0479	WL, EXT	04/27/2005	N001	9.30 - 23.60	2.34		F	#	-	-
	NTU	0483	WL	04/27/2005	N001	18.00 - 18.00	1.22		F	#	-	-
	NTU	0547	TS, INFL	04/28/2005	N001	0.00 - 0.00	1.39			#	-	-
	NTU	0548	TS, EPND	04/28/2005	N001	0.00 - 0.00	5.20			#	-	-
	NTU	0557	WL	04/27/2005	N001	40.00 - 40.00	2.32		F	#	-	-
	NTU	0559	WL	04/27/2005	N001	19.00 - 19.00	2.95		F	#	-	-
	NTU	0560	WL	04/27/2005	N001	31.00 - 31.00	1.84		F	#	-	-
	NTU	SMI-PW02	WL	04/28/2005	N001	20.04 - 60.04	1.35		F	#	-	-
Uranium	mg/L	0216	SL, RIV	04/27/2005	0001	1.00 - 1.00	0.0021			#	2.2E-06	-
	mg/L	0470	WL, EXT	04/28/2005	0001	10.30 - 19.70	0.530		F	#	0.00022	-
	mg/L	0471	WL, EXT	04/28/2005	0001	10.30 - 19.70	0.510		F	#	2.2E-05	-
	mg/L	0472	WL, EXT	04/28/2005	0001	10.30 - 19.70	0.680		F	#	0.00022	-
	mg/L	0473	WL, EXT	04/28/2005	0001	10.30 - 19.70	0.890		F	#	0.00022	-
	mg/L	0474	WL, EXT	04/28/2005	0001	10.30 - 19.70	0.960		F	#	0.00022	-
	mg/L	0475	WL, EXT	04/28/2005	0001	10.30 - 19.70	1.100		F	#	0.00022	-
	mg/L	0476	WL, EXT	04/27/2005	0001	10.30 - 19.70	0.850		F	#	0.00022	-
	mg/L	0477	WL, EXT	04/27/2005	0001	10.30 - 19.70	0.840		F	#	0.00011	-
	mg/L	0478	WL, EXT	04/27/2005	0001	9.60 - 23.90	1.100		F	#	0.00011	-
	mg/L	0479	WL, EXT	04/27/2005	0001	9.30 - 23.60	0.690		F	#	0.00022	-
	mg/L	0483	WL	04/27/2005	0001	18.00 - 18.00	1.200		F	#	0.00022	-
	mg/L	0547	TS, INFL	04/28/2005	0001	0.00 - 0.00	1.300			#	0.00022	-
	mg/L	0548	TS, EPND	04/28/2005	0001	0.00 - 0.00	2.500			#	0.00022	-
	mg/L	0557	WL	04/27/2005	0001	40.00 - 40.00	2.600		F	#	0.00022	-
	mg/L	0559	WL	04/27/2005	0001	19.00 - 19.00	0.320		F	#	1.1E-05	-
	mg/L	0560	WL	04/27/2005	0001	31.00 - 31.00	1.700		F	#	0.00022	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 9/6/2005 11:14 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	0560	WL	04/27/2005	0002	31.00 - 31.00	1.800		F	#	0.00022	-
	mg/L	SMI-PW02	WL	04/28/2005	0001	20.04 - 60.04	2.000		F	#	0.00022	-

RECORDS: SELECTED FROM USEE200 WHERE site_code='MOA01' AND location_code in('0470','0471','0472','0473','0474','0475','0476','0477','0478','0479','0483','0557','0559','0560','0547','0548','SMI-PW02','0216') AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #4/27/2005# and #4/28/2005#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LOCATION TYPES: SL SURFACE LOCATION TS TREATMENT SYSTEM WL WELL

LOCATION SUBTYPES: EPND Evaporation Pond EXT Extraction Well INFL Treatment System Influent RIV River

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- F Low flow sampling method used.
- G Possible grout contamination, pH > 9.
- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- Q Qualitative result due to sampling technique
- R Unusable result.
- U Parameter analyzed for but was not detected.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

Water Level Data

STATIC WATER LEVELS (USEE700) FOR SITE MOA01, Moab Site
REPORT DATE: 9/2/2005 8:53 am

LOCATION CODE	FLOW CODE	TOP OF CASING ELEVATION (FT)	MEASUREMENT		DEPTH FROM TOP OF CASING (FT)	WATER ELEVATION (FT)	WATER LEVEL FLAG
			DATE	TIME			
0470		3968.49	04/28/2005	11:15	8.85	3959.64	
0471		3968.83	04/28/2005	11:00	10.08	3958.75	
0472		3968.81	04/28/2005	10:48	9.95	3958.86	
0473		3969.05	04/28/2005	10:33	10.56	3958.49	
0474		3969.22	04/28/2005	10:18	10.23	3958.99	
0475		3969.46	04/28/2005	10:04	10.78	3958.68	
0476		3969.48	04/27/2005	16:20	11.23	3958.25	
0478		3969.49	04/27/2005	15:35	12.93	3956.56	
0479		3969.27	04/27/2005	15:19	9.89	3959.38	
0483		3968.90	04/27/2005	14:05	13.73	3955.17	
0557		3968.85	04/27/2005	14:30	13.58	3955.27	
0559		3969.92	04/27/2005	13:31	14.12	3955.80	
0560		3968.77	04/27/2005	13:00	13.93	3954.84	
SMI-PW02	O	3967.48	04/28/2005	08:41	13.32	3954.16	

RECORDS: SELECTED FROM USEE700 WHERE site_code='MOA01' AND location_code in('0470','0471','0472','0473','0474','0475','0476','0477','0478','0479','0483','0557','0559','0560','SMI-PW02') AND LOG_DATE between #4/26/2005# and #4/28/2005#

FLOW CODES: O ON-SITE

WATER LEVEL FLAGS:

Blanks

BLANKS REPORT
LAB CODE: PAR, PARAGON (Fort Collins, CO)
LAB REQUISITION(S): 05040183
REPORT DATE: 08/22/05 10:53:04: AM

PARAMETER	SITE CODE	LOCATION ID	SAMPLE DATE	ID	UNITS	RESULT	QUALIFIERS LAB	DATA	DETECTION LIMIT	UNCERTAINTY	SAMPLE TYPE
Ammonia Total as N	MOA01	0999	04/27/2005	0002	mg/L	0.1	U		0.1		E
Chloride	MOA01	0999	04/27/2005	0002	mg/L	0.27			0.2		E
Sulfate	MOA01	0999	04/27/2005	0002	mg/L	0.5	U		0.5		E
Total Dissolved Solids	MOA01	0999	04/27/2005	0002	mg/L	20	U		20		E
Uranium	MOA01	0999	04/27/2005	0002	mg/L	0.000056	B	U	0.0000022		E

BLANKS REPORT
LAB CODE: PAR, PARAGON (Fort Collins, CO)
LAB REQUISITION(S): 05040183
REPORT DATE: 08/22/05 10:53:04: AM

PARAMETER	SITE CODE	LOCATION ID	SAMPLE DATE	ID	UNITS	RESULT	QUALIFIERS LAB	QUALIFIERS DATA	DETECTION LIMIT	UNCERTAINTY	SAMPLE TYPE

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
Z	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
C	Pesticide result confirmed by GC-MS.
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
D	Analyte determined in diluted sample.
P	> 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
>	Result above upper detection limit.
J	Estimated

DATA QUALIFIERS:

J	Estimated value.	F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.
L	Less than 3 bore volumes purged prior to sampling.	R	Unusable result.	X	Location is undefined.
U	Parameter analyzed for but was not detected.	Q	Qualitative result due to sampling technique		

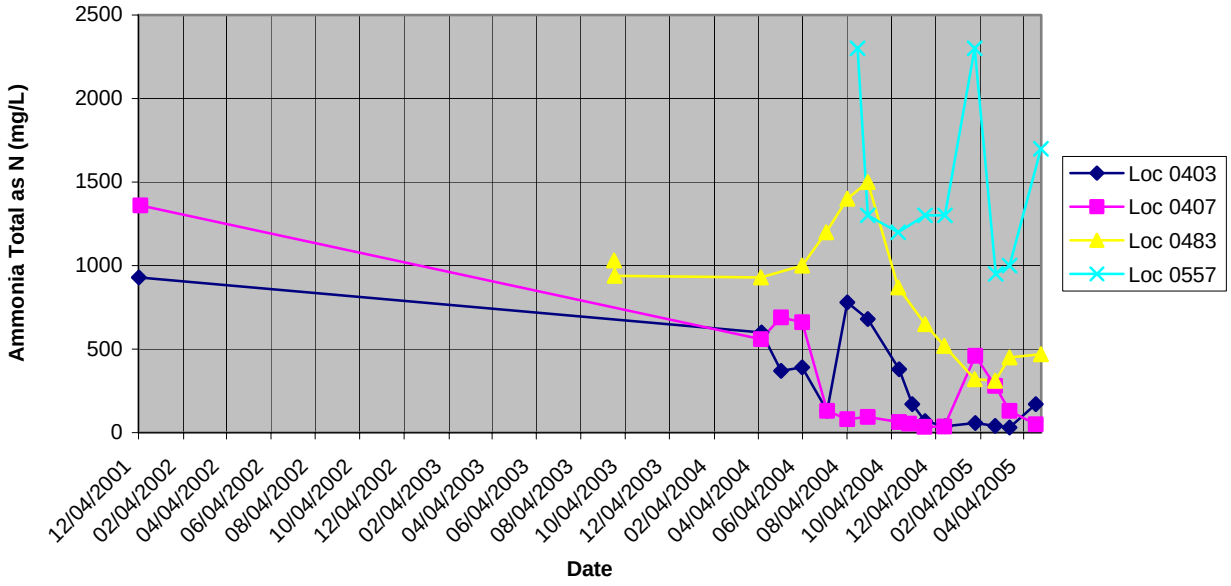
SAMPLE TYPES:

E	EQUIPMENT BLANK

Time Versus Concentration Graphs

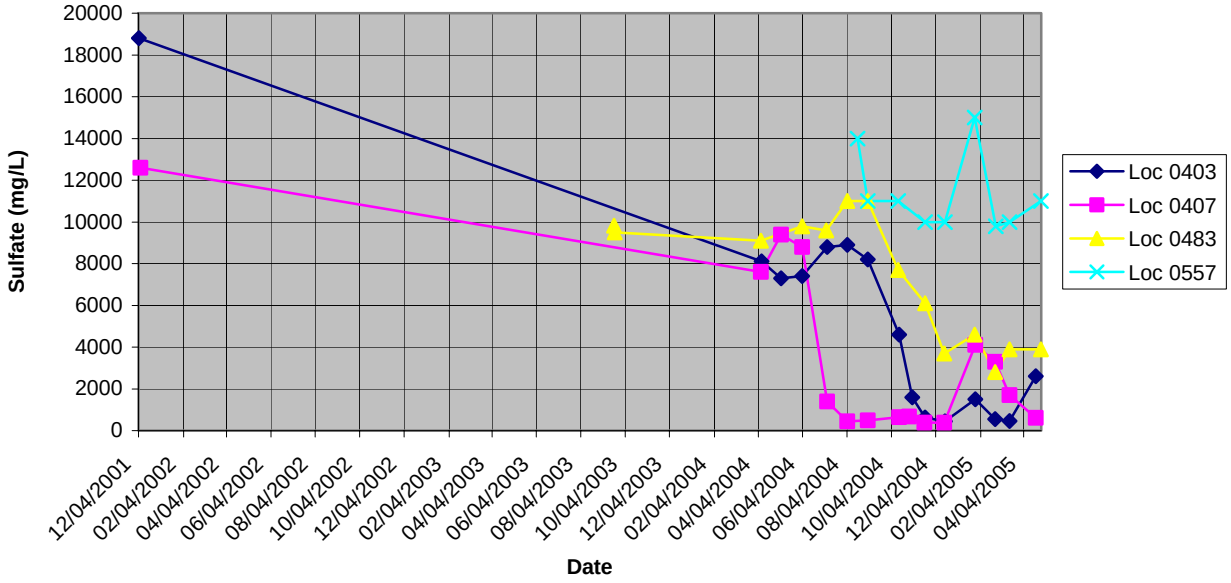
Moab Site (MOA01)

Ammonia Total as N Concentration



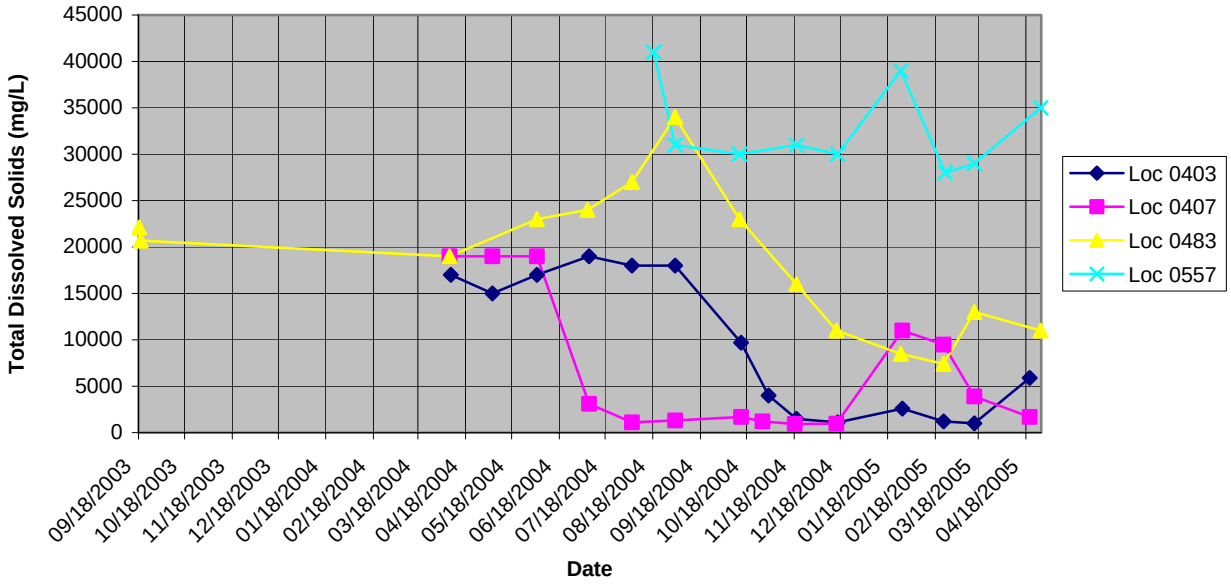
Moab Site (MOA01)

Sulfate Concentration



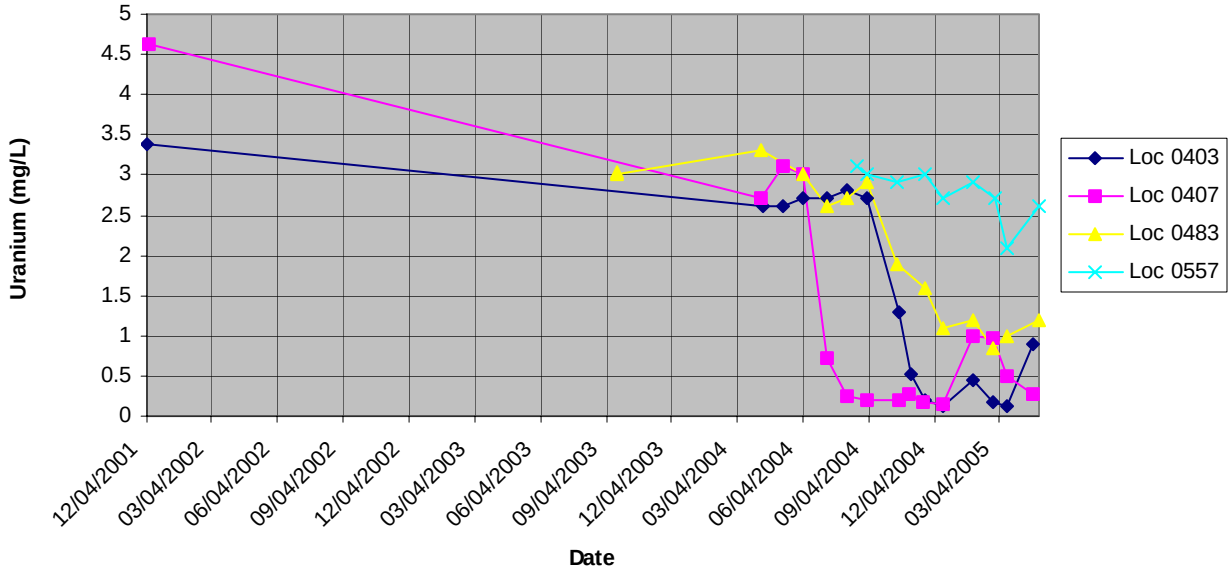
Moab Site (MOA01)

Total Dissolved Solids Concentration



Moab Site (MOA01)

Uranium Concentration



Attachment 2

Trip Report

Stoller

established 1959

DATE: May 12, 2005

TO: Ken Karp

FROM: K. G. Pill

SUBJECT: Trip Report

Site: Moab – Interim Action Configuration 1 Extraction Well Field Monthly Sampling – April 2005 – **REVISED**

Date of Sampling Event: April 27 and 28, 2005.

Team Members: Ken Pill and Emile Bettez.

Number of Locations Sampled: 11 extraction wells (0470 through 0479 and SMI-PW02), 4 observation wells (0483, 0557, 0559, and 0560), 1 surface water location (0216), and 2 treatment system locations (0547 and 0548). Including one duplicate and one equipment blank, a total of **20** samples were collected.

Locations Not Sampled/Reason: Observation wells 0403 and 0407 were sampled during the previous week as part of the routine sampling effort, and were not sampled during this monthly event. With the high stage of the river, piezometers 0562 through 0565 were under water, and as a result they were not sampled. In addition, there was no access to surface water location 0245, and it also was not sampled.

Field Variance: Only a 125 ml sample was collected for uranium analysis as opposed to the standard 500 ml sample volume.

Quality Control Sample Cross Reference: Following are the false identifications assigned to the quality control samples:

False ID	**True ID**	**Sample Type**	Associated **Matrix**	**Ticket Number**
2782	0560	Duplicate	Ground water	NDV-456
2783	NA	Equipment Blank – GW Equip	DI Water	NDV-460

RIN Number Assigned: All samples were assigned to RIN **05040183**.

Sample Shipment: All samples were shipped in 1 cooler overnight FEDEX to Paragon Analytics, Inc. from Moab, Utah, on April 28, 2005 (Airbill No. 8473 2967 6384).

Location Specific Information – Extraction Wells: Extraction wells were sampled using dedicated submersible pumps. Water levels and pumping rates (gpm) for each extraction well prior to sampling are provided in the table below. With the construction of the new vaults, the measuring point for wells has been changed. There is approximately 4 feet of difference between the previous top of casing (toc) elevation and the current toc elevation. All water levels listed in the table were measured from the new toc elevation, which has not been surveyed in at this point.

The construction of the new vaults was completed just prior to sampling. On average, the extraction wells were offline for approximately 10 days during the construction process. The table below also provides how long the pump was running at each location prior to sample collection. This sampling event also represents the first time well PW02 was sampled, which was added to the extraction system around April 5, 2005.

Well No.	Date	Time	Water Level (ft btoc)[a]	Pumping Rate (gpm)	Time Since Pump Re-Started (days)
0470	4/28/05	11:15	8.85	4.01	<1
0471	4/28/05	11:00	10.08	3.13	<1
0472	4/28/05	10:48	9.95	2.31	<1
0473	4/28/05	10:33	10.56	1.19	1
0474	4/28/05	10:18	10.23	0.32	1
0475	4/28/05	10:04	10.78	2.28	1
0476	4/27/05	16:20	11.23	~1.0[b]	1
0477	4/27/05	15:51	-[c]	~1.0[b]	1
0478	4/27/05	15:35	12.93	5.74	2
0479	4/27/05	15:19	9.89	1.08	6
SMI-PW02	4/28/05	08:41	13.32	23.97	na

Notes: a = All water levels measured from new toc measuring point
b = Pumping rate was estimated. Well was running, but flow meter not operating properly at the time of sampling.
c = Construction in the area did not allow for depth to water measurement.

Location Specific Information – Observation Wells: All observation wells were sampled using micro-purge techniques with a peristaltic pump and dedicated downhole tubing. Sample depths and water levels for each observation well are listed below. **Note the sample depths are below ground surface (bgs).**

Well No.	Date	Time	Depth to Water (ft btoc)	Sample Depth (ft bgs)
0483	4/27/05	14:05	13.73	18
0557	4/27/05	14:30	13.58	40
0559	4/27/05	13:31	14.12	19
0560	4/27/05	13:00	13.93	31

Location Specific Information – Surface Water Sampling: During previous sampling events, the surface water sample for location 0216 was adjacent to piezometers 0562 and 0563. With the high stage of the river during this sampling event, it was not possible to collect a sample from this exact location. As a result, the sample for 0216 was collected higher on the bank, and

approximately 15 ft north of the standard location. The sample was collected approximately 3 ft off the bank, from a depth of approximately 1 ft below the water surface.

Location Specific Information – Treatment System Sampling: Locations 0547 and 0548 were sampled when the evaporation pond level was 7.4 ft.

Well Inspection Summary: A well inspection was not conducted.

Equipment: Temperature and corresponding specific conductance data collected from extraction wells 0471 through 0475 fluctuated significantly during the sampling at these locations. Such a response suggests the probe was not operating properly. As a result, these data were not considered to be valid.

Site Issues: According to the USGS Cisco Gaging Station (Station No. 09180500), the mean daily Colorado River Flows during the time period of this sampling event were:

Date	Daily Mean Flow (cfs)
04/24/2005	9,830
04/25/2005	No data
04/26/2005	No data
04/27/2005	No data
04/28/2005	12,000

Note: The station experienced equipment problems from 4/25 through 4/27. However, based on field observations during the sampling event and during the previous week's routine sampling event, it is estimated that the flow ranged from 10,000 and 12,000 cfs on 4/26 and 4/27/05.

Corrective Action Required/Taken: None.

(KGP/lcg)

cc: J. D. Berwick, DOE-EM (e)
D. R. Metzler, DOE-EM
C. I. Bahrke, Stoller (e)
L. E. Cummins, Stoller (e)
S. E. Donivan, Stoller (e)
L. M. Edwards, Stoller (e)
S. D. Lyon, Stoller (e)
K. E. Miller, Stoller
K. G. Pill, Stoller (e)
J. E. Price, Stoller (e)

View Toward Piezometers 0564 and 0565

Surface Location 0216